File : ACT/045/013

Getty

Getty Mining Company | P. O. Box 838, Tooele, Utah 84074-0838 • Telephone (801) 268-4447

Mercur Mine

June 28, 1985

Mr. Lowell Braxton, Administrator
Mineral Resource Development & Reclamation Program
Utah State Department of Natural Resources
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Lowell:

SUBJECT: Proposed MRP Amendment to Mercur Gold Mine
ACT/045/013, Tooele County, Utah

As we discussed on Friday, June 28, submittal of detailed drawings for dump leach Area 2 will take approximately three weeks. This delay will jeopardize timely approval for dump leach Area 1 which is the first area to be placed in operation. Therefore, Getty is requesting the Division consider approving only dump leach Area 1 at this time per our June 14, 1985 transmittal.

Both dump leach areas will be of like design and operation. Areas 1 and 2 are stand-alone operations, sharing only common solution mixing facilities and leached solution endpoint (CIL circuit). Bonding issues will be addressed under separate cover for all disturbed areas involved.

I appreciate your effort and patience on this project and will contact you to provide any assistance possible. Please advise me or Dirk Bleazard should you have any questions.

Thank you for your consideration.

Respectfully,

Dirk D. Bleazard for Glenn M. Eurick

Glenn M. Eurick
Environmental & Occupational Health Coordinator

GME/cg

cc: R. H. Migliaccio
D. G. Bleazard
E. E. Maurer
J. C. Sprague
L. D. Kornze

File: ACT/045/013

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Mercur Mine

June 14, 1985

RECEIVED
JUN 18 1985
DIVISION OF OIL
GAS & MINING

Mr. Lowell Braxton, Administrator
Mineral Resource Development & Reclamation Program
Utah State Department of Natural Resources
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Lowell:

SUBJECT: Proposed MRP Amendment to Mercur Gold Mine ACT/045/013, Tooele County, Utah

I am in receipt of your letter dated May 21, 1985, which presents your comments on our proposed dump leach operation document which was filed with the Division on March 1, 1985. The attached information is Getty's response to the Division's concerns.

With the exception of your comment on page 3, "Biology - Rule M-5," I feel all issues have been addressed satisfactorily. In light of our pending acquisition by Barrick Resources and the re-calculation of the existing bond for ACT/045/013, a response to "Biology - Rule M-5" will be handled under separate cover.

It must be noted that the detailed information and drawings submitted herewith are for dump leach Area 1. Area 2 detailed information and drawings will be transmitted pending completion of topsoil removal at Area 2. Please keep in mind that the basic design parameters for the Area 2 dump will remain constant with the Area 1 dump.

To summarize, Getty is requesting approval to commence construction and operation of our dump leach operations, pending negotiation of the reclamation surety bond and transmittal of dump leach Area 2 details and drawings. I am available at your request to supply any additional information you need to ensure timely approval of this amendment. Through mutual cooperation, I feel we can ensure an environmentally sound leaching operation at Mercur.

Please give me a call at extension 313 for any assistance.

Respectfully,

Glenn M. Eurick
Environmental & Occupational Health Coordinator

GME/cg

Enclosures

cc: R. H. Migliaccio
E. E. Maurer
J. C. Sprague
L. D. Kornze

GETTY MINING COMPANY - MERCUR MINE

PROPOSED AMENDMENT TO MERCUR GOLD MINE
MRP,ACT/045/013, TOOELE COUNTY, UTAH

RESPONSE TO DIVISION OF OIL, GAS & MINING
LETTER DATED May 21, 1985

June 13, 1985

Q: Hydrology - Rule M-3(1)(h) Paragraph 1

A: Attached for your review as Attachment 1, please find the document "Geologic Report for Dump Leach Project Area, Getty Mining Company, Mercur Mine, Tooele County, Utah. April 1985." This document presents available information on geologic and hydrologic features of the area proposed for our dump leaching operation.

In addition to the supporting geologic and hydrologic data, the following changes have been incorporated into the dump leach design:

1. A clay shale subbase will be utilized under the synthetic liner rather than Golden Gate tails. Permeability test results are presented in Attachment 2 for your review. Long Trail shale readily available from our mining operations is the material to be used.

2. A leak detection system will be utilized above the clay shale subbase but below the synthetic liner. This system will be monitored regularly to provide quick detection of leaching solution in the unlikely event of a synthetic liner failure (see Attachment 3, Drawing No. 7-00-100, Piping Layout, Section 3).

3. A synthetic liner used in conjunction with a geotextile fabric will be utilized. A 40-mil linear low density polyethylene synthetic liner has been chosen due to its seaming, strength and durability characteristics. A 127-mil geotextile will be placed above and below the synthetic membrane to provide cushioning from impact damage to the synthetic. The geotextile additionally provides free-draining capability for both the gold pregnant solution above the liner and any potential leak solution below the liner. Specifications for both the synthetic liner and the geotextile can be found in Attachment 4.

With regard to your concerns about downdip conveyance of leaching solution in the groundwater should a leak occur, data indicate the flow to be less than 1,000 feet per year due to the structural complexities of the area. This information, coupled with the above presented design changes involving the clay shale subbase, leak detection system, and geotextile/synthetic liner configuration, provides a comfortable safety factor for the prevention of any leaching solution entering the underlying geological formations or water yielding zones.

Q: Hydrology - Rule M-3(1)(h) Paragraph 2

A: Presented in Attachment 5 are the calculations and information utilized for surface runoff hydrology for the dump leach proposal.

Based upon this data and observed, on-site runoff characteristics, all surface runoff can be adequately and safely contained in sedimentation ponds B, C1, and C2.

Q: Hydrology - Rule M-10(6)

A: The treatment of sodium cyanide or sodium cyanide solution will be handled with the same precautions as presently exist under normal operating conditions. Dump leaching solution will be prepared at our existing reagent mix area. Operators are presently trained in these procedures. Conveyance of leaching solution to/from the dump leach areas will be accomplished via piping laid in sloped, clay shale-lined trenches as detailed in Drawing 2-00-100, Plan Elevations & Details (Attachment 3). In the event of a pipe leak, solution will flow down the sloped ditch on the impermeable clay-shale to the dump leach surface. Inspection of all piping/pumping systems will be performed regularly by the designated mill department employee trained to recognize and react to situations involving sodium cyanide solutions.

Upon completion of leaching any area, the dump will be flushed with water for whatever period of time necessary to reduce the leached solution concentration to less than 50 ppm free cyanide. The dumps will be dewatered to the greatest extent practicable upon abandonment. As free cyanide is rapidly degraded in the environment, this procedure is satisfactory for essentially complete removal of free cyanide from the dump.

Q: Biology - Rule M-3(2)(e)

A: The reclamation plan to be applied to the dump leach areas proposed shall be essentially the same as those in the original plan, particularly those detailed on page 2-56, M-10(9) for waste rock dumping, with the following modifications:

- A cap of impermeable clay shale shall be applied to the flat tops of the abandoned dump leaches to prevent precipitation percolation through the dumps. Topsoil will then be placed on the clay shale and seeded.

- All external pipe, pumps, structures, etc., will be removed from the leach dumps upon final abandonment. The internal synthetic liners and geotextile fabrics will remain in the dumps. The liners will be punctured by drilling to allow free drain of the dumps.

- As all dump leach sites are to receive topsoiling, Seed Mix #1 and Tree and Shrub List #1 will be utilized.

Q: Biology Rule M-10(12) Paragraph 1

A: A 1"=400' scale map, such as 2.2-4 A through C, is not available at this time to present vegetation types, existing disturbed area outline, and outline of proposed disturbance area. In lieu of said map, please refer to the following previously submitted maps to ascertain the same information:

- Map 2.2-4 A through C. Vegetation maps submitted with original mining and reclamation plan.

- 1984 End of Year Disturbance Map submitted with 1984 Form MR-33 by Getty, March 18, 1985.

- Drawing No. 2, Mercur Mine Phase 2 Estimated 10-Year Progress Map. Submitted to D.O.G.M. March 1, 1985 with proposed MRP Amendment for Dump Leach Operation.

As can be seen on Map 2.2-4(b), the area underlying the proposed dump leach operation is a mixed brush community. Studies performed by Mariah Associates in June 1980 for mixed brush communities are found on page 2-16 of the original MRP. This accurately reflects vegetation on the proposed dump leach sites. The other drawings referred to above will assist in locating the dump leach areas and present disturbance on Maps 2.2-4 A through C.

Getty will prepare a 1"=200' scale map for all disturbed areas, newly permitted areas, and vegetation types for submittal with the 1985 MR-3 Form.

Q: Biology - Rule M-10(12) Paragraph 2

A: Getty has committed to the establishment of experimental reclamation plots. The design details and objectives of the experimental reclamation program are scheduled to be submitted to the Division for review by September 1, 1985. Installation and seeding will be completed by November 1, 1985, to optimize 1986 growth and represent existing conditions.

Conceptually, the experimental plan shall consist of a series of 4'x4' square plots, framed and filled with various materials. Clear material will be used on some side boards to visually evaluate root depth and penetration. Materials likely to be evaluated are topsoil, dried tailings, subsoil, run-of-mine waste rock, and carbonaceous waste materials from the mining operation. No supplemental water or fertilizers will be utilized. Seed, tree, or shrub varieties used will be obtained from previously submitted lists. The location of the experimental plots will be the visitor's overlook area north of the plant site.

In addition to the experimental plots, full-scale efforts are presently ongoing. Topsoil piles have been seeded and are showing positive results. The lower Sacramento dump has been

released for revegetation work by the Mine Department. Topsoil material has been placed on the slopes with seeding to be undertaken as soon as possible. Sedimentation ponds, constructed of previously disturbed bottomland soil material, have also been seeded and are showing substantial tall wheatgrass growth.

Q: Biology - Rule M-5

A: As indicated in the cover letter accompanying these responses, Getty will address the surety bond issue under separate cover. Discussions with P. Littig indicate the opportunity to reevaluate the current $5.7 million bond amount which was based upon an inflation factor of 10%/year until 1992. The bond amount to cover the additional dump leach areas will be included in said reevaluation of the existing bond.

Work on the bond situation is scheduled to start the week of June 17, 1985.

Q: Engineering - Item 1

A: The potential for wind drift of sprayed leaching solution exists under only extreme meteorological conditions. The selection of Senniger wobblers for spraying of solution will greatly reduce this likelihood. Senniger wobblers are designed for large droplet application, which in turn minimizes airborne retention time, evaporation, and misting. Getty shall ensure minimal drift by operating personnel surveillance of spraying systems and by shuting down the system should drift be observed under extremely windy situations.

Q: Engineering - Item 2

A: See Q:Hydrology - Rule M-10(6) response.

Q: Engineering - Item 3

A: Upon construction and operation approval from DNR-DOGM, D.O.H.-B.W.P.C. and Tooele County for the modified design and details, the following actions will be undertaken:

- Notification will be made to MSHA requesting a pre-construction meeting. This meeting will resolve any safety or health issues for operation.

- No notification will be made to OSHA as that agency has no regulatory jurisdiction at Mercur.

- Notification will be made to EPA Region VIII advising them of the dump leach installation. EPA presently has regulatory approval of water discharges from our sedimentation ponds. Since the dump leach will not alter the possibility of discharges, only notification is required.

All regulations concerning the handling and use of cyanide and cyanide solutions are currently being compiled with to the fullest extent.

Q: Engineering - Rule M-10(3)

A: See Q:Hydrology - Rule M-10(6) and Q:Biology - Rule M-3(2)(e) responses.

Q: Engineering - Rule M-10(4)

A: As described on page 2-56 of the original MRP, all upper edges of the dump leach lifts will be rounded to provide a smooth transition between the flat top surface and the dump face slopes. Provided for your review in Attachment 3, please find the following drawings:

- Drawing 2-00-102. Dump Leach Project Area-1 Sub-Ore 1st and 2nd Lifts. Plans and Sections.

- Drawing 7-00-100. Dump Leach Project Area 1. Piping layouts.

- Drawings 2-00-101/104. Dump Leach Project Area 1. Grade Plan and Subore Lifts 1 through 8. Plan and Sections.

The referenced drawings depict the staged construction for the first three years of dump leach Area 1. As final drawings are completed for the 5- and 10-year phases of dump leach Areas 1 and 2, transmittal will be made to the Division for review. However, the drawings submitted herewith are indicative of the ultimate layout. All final drawings will allow for adequate reclamation contours by minimizing long, unbroken slopes.

Q: Engineering - Rule M-10(6) Page 4

A: As previously described, all dumps will be flushed with fresh water after gold leaching is completed. This flushing procedure will continue until sampled solution is analytically determined to have less than 50 ppm free cyanide content. Upon achieving this level, all flushing will stop, and the dumps will be allowed to free drain, with residual solution pumped out until pumping is complete. Chlorine solutions can be utilized for cyanide destruction; however, CO entrapped with the fresh water flushing is equally effective in reducing the pH of the heap, thus liberating the free cyanide. Therefore, fresh water flushing promotes oxidation and results in neutralization of the dump.

Q: Engineering - Rule M-10(8) Page 4

A: Detailed drawings for ultimate configurations of the 10-year dump leach Phase 2 have yet to be generated. Reestablishment of natural pre-Getty drainage is impossible. Ultimate drainage paths will be designed to ensure that adequate hydrological concerns are matched with surface configurations that exist upon abandonment. Please refer to Drawing No. 2, Mercur Mine Phase 2 Estimated 10-Year Program Map, submitted March 1, 1985, for the general concept of surface configurations existing at completion of the project.

Q: Soils - Item 1, Page 4

A: Recoverable topsoil estimates used for the March 1, 1985 submittal resulted from field surveys of the proposed disturbed area. Operating experience during the last 3+ years at Mercur has determined that topsoil depths vary so greatly from area to area that an extensive sampling program is the only method to predict recoverable quantities. Rather than embark on such a program, Getty has chosen to assure all agencies involved that all recoverable topsoil will be stockpiled. Mercur environmental personnel are responsible for ensuring this action is taken.

Please refer to Getty's letter to Mr. Ron Daniels, dated June 4, 1985, concerning procedures Getty will undertake when recovering topsoil from the dump leach Area 2 site. Like procedures will be applied to any site requiring topsoil recovery.

Q: Soils - Item 2, Page 4

A: The wording of Section 1.3 of the March 1, 1985 application concerning topsoil and vegetation removal was indeed misleading and warrants your comment. All precautions practicable will be taken to minimize vegetative material in the topsoil.

Q: Soils - Item 3, Page 4

A: Please refer to the correspondence submitted to Mr. Lowell Braxton by Getty, dated June 4, 1985, requesting approval for topsoil stripping in dump leach Area 2. The accompanying drawing depicts the location of the topsoil stockpile to be utilized for dump leach area stripping. No topsoil will be placed on existing topsoil piles. The topsoil pile shall be shaped and left with a roughened surface. Erosion control will be accomplished via berms and immediate seeding.

Q: Soils - Item 4, Page 4

A: The 4" topsoil depth redistribution was used as a desirable value for sustaining intended revegetation grass species based upon estimated surface areas and recovered topsoil. In all practicality, this value is still desired but dependent upon the following factors:

- Ultimate surface area to be reclaimed. Since final engineering drawings are to be developed for this area, this number shall still remain open to correction.

- The quantity of topsoil recovered and stockpiled.

- The ability of the haulage truck and dumping topsoil over dump faces to obtain a relatively uniform depth. Getty recognizes that an absolute uniform topsoil depth is impossible on steep dump slopes, but results of utilizing this procedure on the lower Sacramento dump look encouraging. At this time, pending further field experimentation, the back-dump free-roll methods of topsoil redistribution appears to be the most viable.

Q: Soils - Item 5, Page 5

A: Please see Attachment 6 which is the road property agreement between the parties involved in the vacation of the Mercur Canyon access road. Review paragraph 3, page 2, of said road property agreement for future Tooele County obligations for the Mercur Canyon access road.